1. Write a query to count the number of invoices.

```
sqlite> SELECT COUNT(*) AS invoices_count FROM INVOICE;
```

```
sqlite> SELECT COUNT(*) AS invoices_count FROM INVOICE;
invoices_count
8
sqlite>
```

2. Write a query to count the number of customers with a customer balance over $500.

```
sqlite> SELECT COUNT(*) AS custwbal_over500 FROM CUSTOMER WHERE
CUS_BALANCE > 500;
```

```
sqlite> SELECT COUNT(*) AS custwbal_over500 FROM CUSTOMER WHERE CUS_BALANCE > 500;
custwbal_over500
2
sqlite>
```

3. Generate a listing of all purchases made by the customers.

```
SELECT INVOICE.CUS_CODE, INVOICE.INV_NUMBER, INVOICE.INV_DATE,
PRODUCT.P_DESCRIPT, LINE.LINE_UNITS, LINE.LINE_PRICE
FROM  CUSTOMER, INVOICE, LINE, PRODUCT
WHERE CUSTOMER.CUS_CODE = INVOICE.CUS_CODE
AND   INVOICE.INV_NUMBER = LINE.INV_NUMBER
AND   PRODUCT.P_CODE = LINE.P_CODE
ORDER BY   INVOICE.CUS_CODE, INVOICE.INV_NUMBER,
PRODUCT.P_DESCRIPT;
```

```
sqlite> SELECT INVOICE.CUS_CODE, INVOICE.INV_NUMBER, INVOICE.INV_DATE, PRODUCT.P_DESCRIPT
, LINE.LINE_UNITS, LINE.LINE_PRICE
   ...> FROM CUSTOMER, INVOICE, LINE, PRODUCT
   ...> WHERE CUSTOMER.CUS_CODE = INVOICE.CUS_CODE
   ...> AND INVOICE.INV_NUMBER = LINE.INV_NUMBER
   ...> AND PRODUCT.P_CODE = LINE.P_CODE
   ...> ORDER BY INVOICE.CUS_CODE, INVOICE.INV_NUMBER, PRODUCT.P_DESCRIPT;
CUS_CODE|INV_NUMBER|INV_DATE|P_DESCRIPT|LINE_UNITS|LINE_PRICE
10011|1002|16-JAN-2016|Rat-tail file, 1/8-in. fine|2|4.99
10011|1004|17-JAN-2016|Claw hammer|2|9.95
10011|1004|17-JAN-2016|Rat-tail file, 1/8-in. fine|3|4.99
10011|1008|17-JAN-2016|Claw hammer|1|9.95
10011|1008|17-JAN-2016|PVC pipe, 3.5-in., 8-ft|5|5.87
10011|1008|17-JAN-2016|Steel matting, 4'x8'x1/6", .5" mesh|3|119.95
10012|1003|16-JAN-2016|7.25-in. pwr. saw blade|5|14.99
10012|1003|16-JAN-2016|B&D cordless drill, 1/2-in.|1|38.95
10012|1003|16-JAN-2016|Hrd. cloth, 1/4-in., 2x50|1|39.95
10014|1001|16-JAN-2016|7.25-in. pwr. saw blade|1|14.99
10014|1001|16-JAN-2016|Claw hammer|1|9.95
10014|1006|17-JAN-2016|1.25-in. metal screw, 25|3|6.99
10014|1006|17-JAN-2016|B&D jigsaw, 12-in. blade|1|109.92
10014|1006|17-JAN-2016|Claw hammer|1|9.95
10014|1006|17-JAN-2016|Hicut chain saw, 16 in.|1|256.99
10015|1007|17-JAN-2016|7.25-in. pwr. saw blade|2|14.99
10015|1007|17-JAN-2016|Rat-tail file, 1/8-in. fine|1|4.99
10018|1005|17-JAN-2016|PVC pipe, 3.5-in., 8-ft|12|5.87
sqlite>
```

4. Generate the listing of customer purchases, including the subtotals for each of the invoice line numbers.

```
SELECT INVOICE.CUS_CODE, INVOICE.INV_NUMBER, INVOICE.INV_DATE,
PRODUCT.P_DESCRIPT, LINE.LINE_NUMBER, LINE.LINE_UNITS,
LINE.LINE_PRICE, LINE.LINE_PRICE*LINE.LINE_UNITS AS subtotal
FROM CUSTOMER, INVOICE, LINE, PRODUCT
WHERE CUSTOMER.CUS_CODE = INVOICE.CUS_CODE AND INVOICE.INV_NUMBER
= LINE.INV_NUMBER AND PRODUCT.P_CODE = LINE.P_CODE
ORDER BY INVOICE.CUS_CODE, INVOICE.INV_NUMBER, LINE.LINE_NUMBER,
PRODUCT.P_DESCRIPT;
```

```
sqlite> SELECT INVOICE.CUS_CODE, INVOICE.INV_NUMBER, INVOICE.INV_DATE, PRODUCT.P_DESCRIPT, LINE.
LINE_NUMBER, LINE.LINE_UNITS, LINE.LINE_PRICE, LINE.LINE_PRICE*LINE.LINE_UNITS AS subtotal
   ...> FROM CUSTOMER, INVOICE, LINE, PRODUCT
   ...> WHERE CUSTOMER.CUS_CODE = INVOICE.CUS_CODE AND INVOICE.INV_NUMBER = LINE.INV_NUMBER AND
PRODUCT.P_CODE = LINE.P_CODE
   ...> ORDER BY INVOICE.CUS_CODE, INVOICE.INV_NUMBER, LINE.LINE_NUMBER, PRODUCT.P_DESCRIPT;
CUS_CODE|INV_NUMBER|INV_DATE|P_DESCRIPT|LINE_NUMBER|LINE_UNITS|LINE_PRICE|subtotal
10011|1002|16-JAN-2016|Rat-tail file, 1/8-in. fine|1|2|4.99|9.98
10011|1004|17-JAN-2016|Rat-tail file, 1/8-in. fine|1|3|4.99|14.97
10011|1004|17-JAN-2016|Claw hammer|2|2|9.95|19.9
10011|1008|17-JAN-2016|PVC pipe, 3.5-in., 8-ft|1|5|5.87|29.35
10011|1008|17-JAN-2016|Steel matting, 4'x8'x1/6", .5" mesh|2|3|119.95|359.85
10011|1008|17-JAN-2016|Claw hammer|3|1|9.95|9.95
10012|1003|16-JAN-2016|B&D cordless drill, 1/2-in.|1|1|38.95|38.95
10012|1003|16-JAN-2016|Hrd. cloth, 1/4-in., 2x50|2|1|39.95|39.95
10012|1003|16-JAN-2016|7.25-in. pwr. saw blade|3|5|14.99|74.95
10014|1001|16-JAN-2016|7.25-in. pwr. saw blade|1|1|14.99|14.99
10014|1001|16-JAN-2016|Claw hammer|2|1|9.95|9.95
10014|1006|17-JAN-2016|1.25-in. metal screw, 25|1|3|6.99|20.97
10014|1006|17-JAN-2016|B&D jigsaw, 12-in. blade|2|1|109.92|109.92
10014|1006|17-JAN-2016|Claw hammer|3|1|9.95|9.95
10014|1006|17-JAN-2016|Hicut chain saw, 16 in.|4|1|256.99|256.99
10015|1007|17-JAN-2016|7.25-in. pwr. saw blade|1|2|14.99|29.98
10015|1007|17-JAN-2016|Rat-tail file, 1/8-in. fine|2|1|4.99|4.99
10018|1005|17-JAN-2016|PVC pipe, 3.5-in., 8-ft|1|12|5.87|70.44
sqlite>
```

5. List the balance characteristics of the customers who have made purchases during the current invoice cycle—that is, for the customers who appear in the INVOICE table.

```
SELECT CUS_CODE, CUS_BALANCE
FROM CUSTOMER
WHERE CUSTOMER.CUS_CODE IN
(SELECT DISTINCT CUS_CODE FROM INVOICE );
```

```
sqlite> SELECT CUS_CODE, CUS_BALANCE
   ...> FROM CUSTOMER
   ...> WHERE CUSTOMER.CUS_CODE IN
   ...> (SELECT DISTINCT CUS_CODE FROM INVOICE );
CUS_CODE|CUS_BALANCE
10011|0
10012|345.86
10014|0
10015|0
10018|216.55
sqlite>
```

This next set of code gives the same answer, but I will submit the above code because I can see how it might be better form to

use a subselect than a WHERE column = column. I am including my original answer and output (same) here and would appreciate your feedback on the difference. Thank you!

```
SELECT CUSTOMER.CUS_CODE, CUSTOMER.CUS_BALANCE
FROM  CUSTOMER, INVOICE
WHERE CUSTOMER.CUS_CODE = INVOICE.CUS_CODE
GROUP BY CUSTOMER.CUS_CODE
ORDER BY   CUSTOMER.CUS_CODE;
```

```
sqlite> SELECT CUSTOMER.CUS_CODE, CUSTOMER.CUS_BALANCE
   ...> FROM CUSTOMER, INVOICE
   ...> WHERE CUSTOMER.CUS_CODE = INVOICE.CUS_CODE
   ...> GROUP BY CUSTOMER.CUS_CODE
   ...> ORDER BY CUSTOMER.CUS_CODE;
CUS_CODE|CUS_BALANCE
10011|0
10012|345.86
10014|0
10015|0
10018|216.55
sqlite>
```

6. Find the listing of customers who did not make purchases during the invoicing period.

```
SELECT CUS_CODE FROM CUSTOMER WHERE CUS_CODE NOT IN (SELECT
CUS_CODE FROM INVOICE);
```

```
sqlite> SELECT CUS_CODE FROM CUSTOMER WHERE CUS_CODE NOT IN (SELECT CUS_CODE FROM INVOICE);
CUS_CODE
10016
10013
10010
10019
10017
sqlite>
```

7. Create a query to produce the summary of the value of products currently in inventory.

```
sqlite> SELECT P_QOH*P_PRICE AS value, P_QOH, P_PRICE, P_CODE,
P_DESCRIPT
FROM PRODUCT;
```

```
sqlite> SELECT P_QOH*P_PRICE AS value, P_QOH, P_PRICE, P_CODE, P_DESCRIPT FROM PRODUCT;
value|P_QOH|P_PRICE|P_CODE|P_DESCRIPT
879.92|8|109.99|11QER/31|Power painter, 15 psi., 3-nozzle
479.68|32|14.99|13-Q2/P2|7.25-in. pwr. saw blade
314.82|18|17.49|14-Q1/L3|9.00-in. pwr. saw blade
599.25|15|39.95|1546-QQ2|Hrd. cloth, 1/4-in., 2x50
1011.77|23|43.99|1558-QW1|Hrd. cloth, 1/2-in., 3x50
879.36|8|109.92|2232/QTY|B&D jigsaw, 12-in. blade
599.22|6|99.87|2232/QWE|B&D jigsaw, 8-in. blade
467.4|12|38.95|2238/QPD|B&D cordless drill, 1/2-in.
228.85|23|9.95|23109-HB|Claw hammer
115.2|8|14.4|23114-AA|Sledge hammer, 12 lb.
214.57|43|4.99|54778-2T|Rat-tail file, 1/8-in. fine
2826.89|11|256.99|89-WRE-Q|Hicut chain saw, 16 in.
1103.56|188|5.87|PVC23DRT|PVC pipe, 3.5-in., 8-ft
1202.28|172|6.99|SM-18277|1.25-in. metal screw, 25
2002.65|237|8.45|SW-23116|2.5-in. wd. screw, 50
2159.1|18|119.95|WR3/TT3|Steel matting, 4'x8'x1/6", .5" mesh
sqlite>
```

For the above, I could have chosen a more complex route of sourcing LINE.LINE_PRICE, but I checked and it is the same as PRODUCT.P_PRICE:

```
sqlite> SELECT LINE.P_CODE, LINE_PRICE, PRODUCT.P_CODE,
PRODUCT.P_PRICE
FROM LINE, PRODUCT
WHERE LINE.P_CODE = PRODUCT.P_CODE;
```

```
sqlite> SELECT LINE.P_CODE, LINE_PRICE, PRODUCT.P_CODE, PRODUCT.P_PRICE
   ...> FROM LINE, PRODUCT
   ...> WHERE LINE.P_CODE = PRODUCT.P_CODE;
P_CODE|LINE_PRICE|P_CODE|P_PRICE
13-Q2/P2|14.99|13-Q2/P2|14.99
23109-HB|9.95|23109-HB|9.95
54778-2T|4.99|54778-2T|4.99
2238/QPD|38.95|2238/QPD|38.95
1546-QQ2|39.95|1546-QQ2|39.95
13-Q2/P2|14.99|13-Q2/P2|14.99
54778-2T|4.99|54778-2T|4.99
23109-HB|9.95|23109-HB|9.95
PVC23DRT|5.87|PVC23DRT|5.87
SM-18277|6.99|SM-18277|6.99
2232/QTY|109.92|2232/QTY|109.92
23109-HB|9.95|23109-HB|9.95
89-WRE-Q|256.99|89-WRE-Q|256.99
13-Q2/P2|14.99|13-Q2/P2|14.99
54778-2T|4.99|54778-2T|4.99
PVC23DRT|5.87|PVC23DRT|5.87
WR3/TT3|119.95|WR3/TT3|119.95
23109-HB|9.95|23109-HB|9.95
sqlite>
```